NeoEn

Neoen is a leading independent power producer of exclusively renewable energy, with a global portfolio capacity of 8.9-gigawatts (GW) in operation or under construction across 14 countries, including 18 energy storage facilities.

Neoen delivered the world's first utility-scale battery energy storage system.

Our develop-to-own strategy means that we prioritize creating and fostering long term relationships within the community.

Neoen has an active solar plant, Fox Coulee Solar Farm, in Starland County, Alberta, and several projects in development in Canada.

NEOEN Project Background

- Jumbo BESS is a 218-megawatt (MW), 4-hour duration, battery energy storage system (BESS) proposed for development on private lands (SW 32-8-26 W4M) approximately 4 kilometres southwest of the Town of Fort MacLeod in the Municipal District of Willow Creek No. 26.

- Jumbo BESS is proposed to provide energy storage capacity and ancillary services such as as frequency regulation, virtual inertia, and network support to Alberta's power grid.

- Jumbo BESS is proposed to interconnect to the existing AltaLink transmission line 1037L located approximately 80 metres to the east of the site.

- Jumbo BESS is a standalone BESS – there are no plans to expand the project to include another renewable technology, such as solar. There is also no further capacity in the transmission lines to operate additional electricity infrastructure on the site.

- Jumbo BESS is being proposed in place of the previously proposed Jumbo Solar with Storage project (Neoen withdrew its AUC application for the Jumbo Solar with Storage project in April 2025).

Project Benefits

- The Alberta Electricity System Operator stated that the province needs up to 1100 MW of fast frequency response services to restore the interprovincial interties and will be procuring up to 800 MW via a competitive procurement process in 2026.

- Jumbo BESS will add 218 MW of capacity and ancillary services like fast frequency response to respond to this grid reliability need in the province.

- $48 million (estimated) in municipal tax revenues over the first 20 years.

- 100+ jobs at peak construction.

- Local art installation.

- $50,000 annual **Community Benefits Fund** to support local initiatives, commencing at operations and continuing each year of operations.

NEOEN BESS Services

Batteries provide a host of important services to improve the grid:

Frequency support: BESS can react in microseconds to stabilize the grid in real time, thereby preventing grid failures

In case of exceptional events such as sudden spike in demand in winter, batteries can support the network

BESS smoothen the intermittency of renewables. As more cheap renewable power comes on grid, BESS balance the production profile.

aeso

The Alberta Electric System Operator (AESO), responsible for managing Alberta's grid, is looking to procure, in 2026, up to 800 MW of power from BESS to support the grid.

About Jumbo BESS

STANDALONE BESS FACILITY

218 MW CAPACITY

~15 ACRES OF AT-GRADE INFRASTRUCTURE

227 LITHIUM-ION BATTERY CONTAINERS

1 HIGH-VOLTAGE TRANSFORMER

*~600 METRES OF OVERHEAD TRANSMISSION LINE + STRUCTURES

*THIS INFORMATION IS SUBJECT TO CHANGE.

Typical BESS Project Lifecycle

Phase 1:

DEVELOPMENT

2 - 3 years

WE ARE HERE

July 2025

Phase 2:

CONSTRUCTION

18 - 24 months

Phase 3:

OPERATIONS

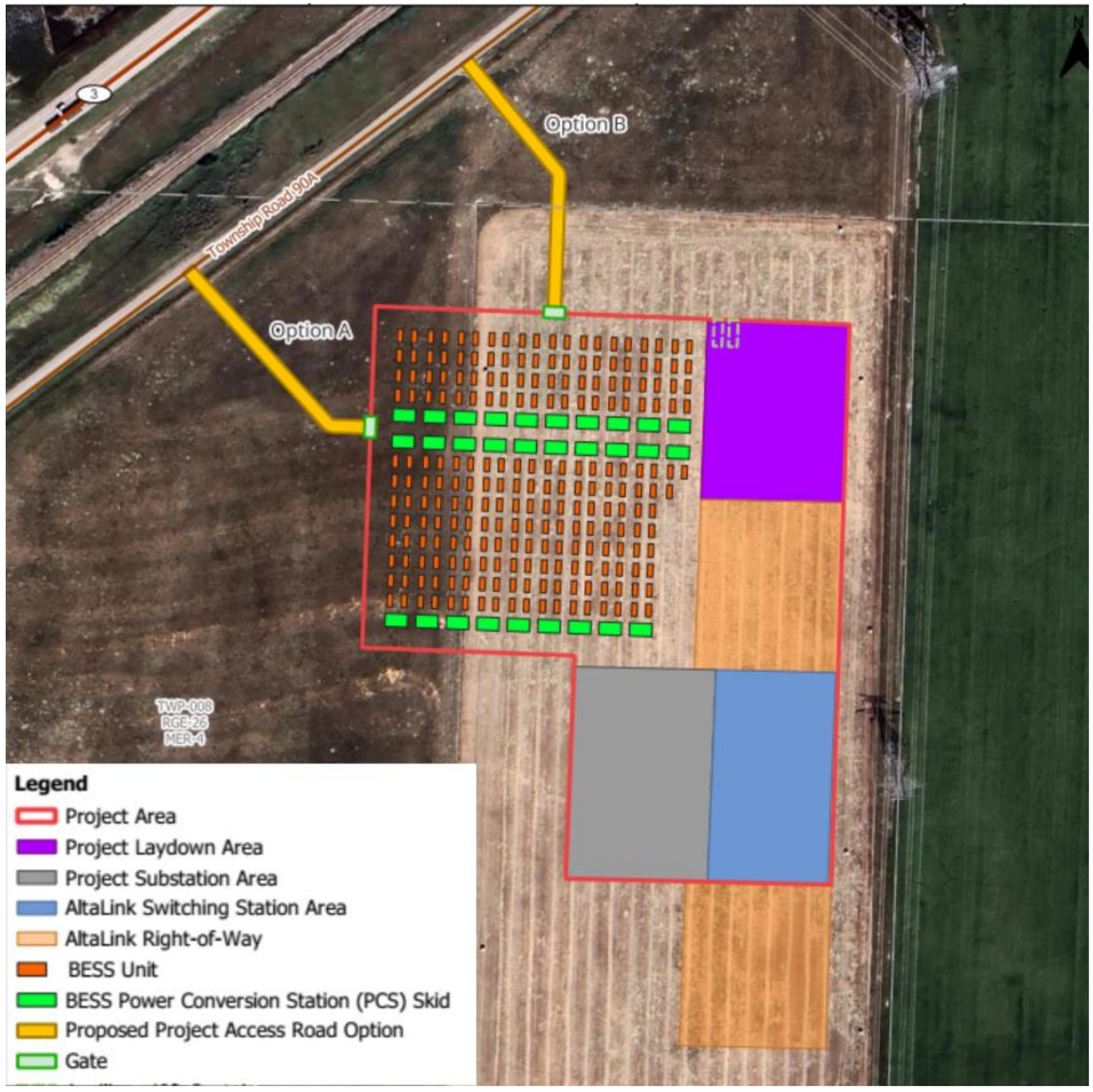
20+ years

NEOEN Proposed Project Location

Why here? The proposed project location satisfies the conditions necessary to develop a BESS, including available transmission capacity, proximity to transmission, landowner willingness, low environmental impact, flat terrain, construction feasibility, and site accessibility.

NEOEN Proposed Layout

- ~227 battery containers with built-in inverters and medium voltage equipment.
- 240-kilovolt substation with one high voltage transformer and circuit breakers.
- An operations and maintenance building.
- A site access road off Township Road 85B (options A or B).
- Storage buildings, laydown areas, and parking.
- Site lighting and video surveillance.
- Total footprint of ~15 acres.



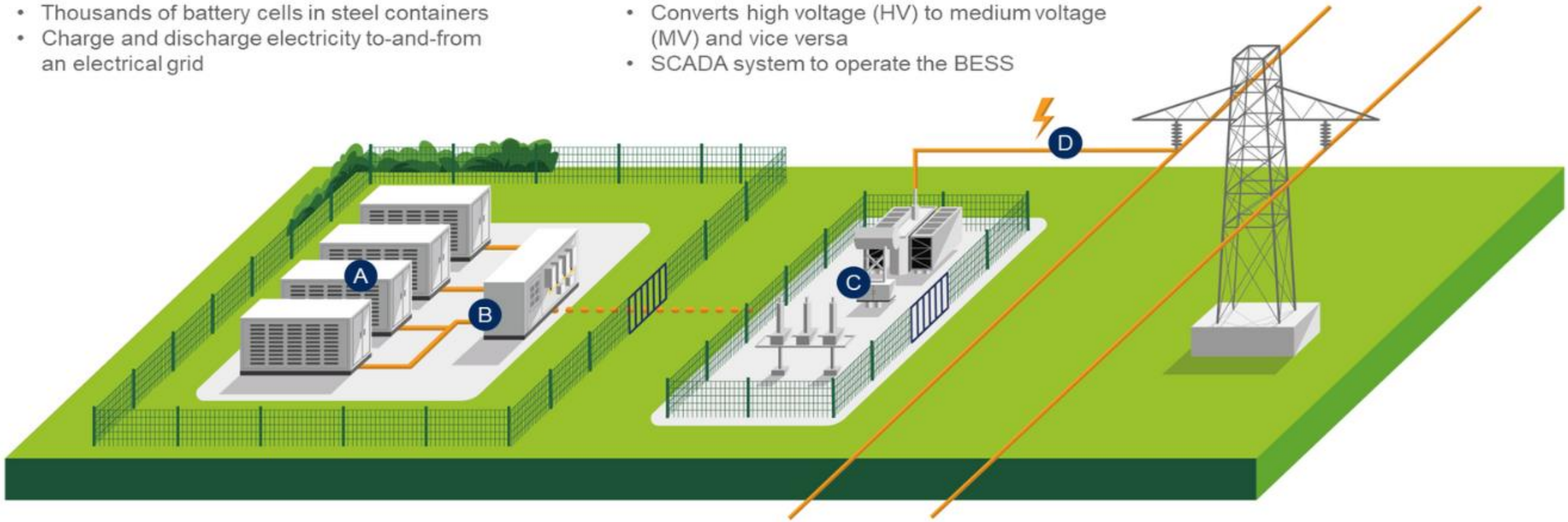
NEOEN How a Standalone BESS Works

A - Battery Containers

- Thousands of battery cells in steel containers
- Charge and discharge electricity to-and-from an electrical grid

C - Transformer Station

- Converts high voltage (HV) to medium voltage (MV) and vice versa
- SCADA system to operate the BESS



B - Inverter

- Converts direct current (DC) to alternating current (AC) and vice versa

D - Transmission Lines

- Transmission lines move electricity to-and-from the BESS
- Steel structures hold the lines overhead
- Electricity travels to-and-from the grid

NEOEN Environmental Assessment

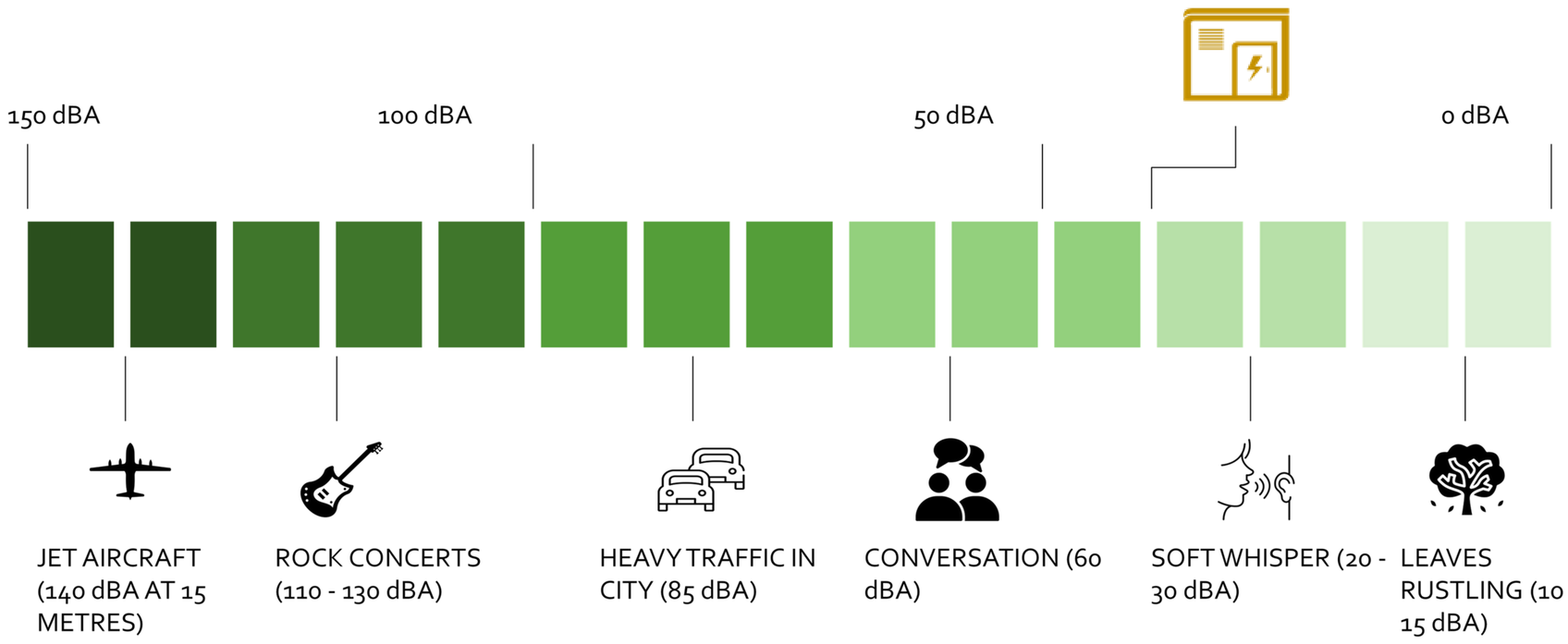
- Jumbo BESS is subject to AUC Rule *007*: *Applications for Power Plants, Substations, Transmission Lines, Industrial System Designations, Hydro Developments and Gas Utility Pipelines*, **which requires Neoen to undertake and submit:**
  - An **Environmental Evaluation (EE)** to assess potential impacts to land, water, and wildlife.
  - An **Environmental Protection Plan (EPP)** that outlines mitigation measures during construction, operation, and decommissioning to address any potential impacts to land, water, and wildlife.
- An EE and EPP have been completed for the Jumbo BESS.
- Neoen has consulted with Alberta Environment and Protected Areas on the project.
- These reports and details of the consultation will be included in the AUC submission

Completed Studies:

- Vegetation Assessment (2023)
- Wetlands desktop and permanence assessment (2025)
- Groundwater Assessment (2025)
- Breeding Bird Surveys (2023)
- Raptor Nest Surveys (2023 & 2025)
- Sharp-tailed Grouse Surveys (2023 & 2025)

NEOEN Noise Assessment

JUMBO BESS SOUND EQUIVALENT AT THE NEAREST RECEPTOR



- Both battery container fans and transformers emit noise - fans oscillate to cool the batteries during warm conditions, and transformers emit a humming noise.
- A Noise Impact Assessment has been conducted and will be included in Neoen's AUC application.
- Jumbo BESS will comply with AUC Rule 012: Noise Control, meeting the receptor-specific Permissible Sound Levels (PSLs), which range from 40 to 45 dBA at night and 50 to 55 dBA during the day depending on location.

NEOEN BESS Safety

- As an experienced developer and operator of utility scale battery storage projects, Neoen's Jumbo BESS is designed to mitigate the risk of fire, chemical, external environmental, and operational hazards that can arise.

- Hazard events are rare and are mitigated through rigorous engineering, procurement of the safest battery technology, protective measures, thorough operations and maintenance, and stringent safety protocols.

- Neoen has prepared a preliminary **Emergency Response Plan (ERP)** which outlines the measures and protocols in place to prevent, mitigate, and respond to hazard events. This will be finalized with input from local emergency responders, the local government, and adjacent neighbours.

- The ERP will be included in Neoen’s AUC application, and Neoen will continue to develop the ERP in consultation with the MD of Willow Creek No. 26 and Town of Fort Macleod.

NEOEN Understanding BESS Safety: Thermal Runaway

- Thermal runaway is an exothermic reaction whereby damaged battery cells release energy in the form of abnormal heat, which in rare circumstances, can propagate and result in smoke, fire, or combustion.

- Jumbo BESS is designed with **passive and active protection measures** to avoid and/or mitigate the risk of fire, explosion, or spill events, including:

    - **Battery Management System** - a 24/7 remote monitoring, diagnostic, troubleshooting and alert system that tracks performance, voltage, current, and state of charge, reacts to fault conditions, and enables the thermal management system to prevent overheating.

    - **Thermal Management System** - an autonomous liquid cooling system that circulates coolant throughout the battery modules to maintain an optimal battery operating temperature.

    - **Overpressure Vents and Ignitors** - vents and ignitors are installed throughout the battery bays. In the rare case of a thermal runaway event, ignitors will ignite flammable gases before they can accumulate. Overpressure vents work autonomously to allow gases, products of combustion, and flames to safely exhaust through the roof of the container during a thermal event, preventing explosion.

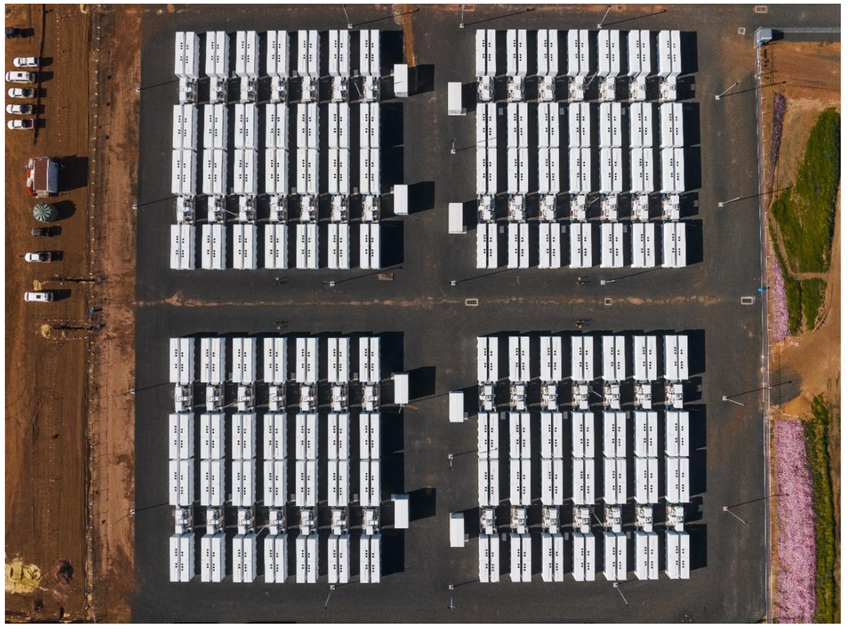
- Neoen completed an Air Dispersion Model (ADM) to identify the types of toxic gases that could be emitted and the associated dispersion radius in the event of a fire, and to inform emergency response. No dwellings were found to be within a dangerous vicinity in the rare fire event.

- A copy of the ADM is available upon request.

NEOEN Understanding BESS Safety: Spill Events

- Jumbo BESS is designed with **passive and active protection measures** to mitigate the risk of a spill event, including:
    - Battery container gutter system and containment basin.
    - Transformer spill trays with oil separators.
- Neoen’s incident response procedure for spills events is outlined in its ERP.

Neoen Australia’s Victorian Big Battery
300MW / 450MWh



Neoen Australia’s Collie Battery Stage 1
219MW / 877MWh

NEOEN Project Timeline

WE ARE HERE

1

Field Studies & Assessments
Spring 2024 – Spring 2025
Neoen undertakes studies and assessments to inform project design and to support consultation and permitting.

2

Consultation
Spring 2025 – Summer 2025
Neoen consults Rightsholders, stakeholders, and community on the project and incorporates feedback.

3

Permit Submissions
August 2025
Neoen submits permit and approval applications to applicable regulatory bodies.

4

Review and Approval
Post-submission
Regulatory bodies review Neoen's applications and may approve or reject the applications

5

Construction
Target Fall 2026
Construction of Jumbo BESS begins

6

Operations
Target Spring 2028
Commercial operations of Jumbo BESS begin.

SUBJECT TO PROJECT APPROVAL

NEOEN Required Studies, Permits and Approvals

- AUC Energy Storage Facility and Substation Permit & License
  [Submission targeted for August 2025]

- Supporting Documentation for the AUC Application:
  - Alberta Arts, Culture and Status of Women - Historical Resources Act (HRA) Approval
  - Environmental Evaluation (EE)
  - Environmental Protection Plan (EPP)
  - Participant Involvement Program (PIP)
  - Emergency Response Plan (ERP)
  - Noise Impact Assessment (NIA)
  - Air Dispersion Modelling (ADM)
  - Visual Impact Assessment from Head-Smashed-In Buffalo Jump

- AUC Connection Project Approval and Facility Application Permit & License

- AEPA - Water Act Approval (if required)

- Alberta Transportation - Roadside Development Permit and Oversized Load Permit

- Land Use Redesignation & Municipal Development Permit Approval

NEOEN BESS Construction

BESS construction typically takes 1.5 years to complete, and includes the following activities:

- Temporary fence installation
- Equipment mobilization
- Temporary storage areas
- Material deliveries (by truck)
- Clearing, cut, fill and grading
- Shallow excavation and pouring of concrete slabs or pile installation
- Hoisting of pre-assembled battery containers and transformers
- Erection of steel structures and transmission lines
- Electrical connection work
- Landscaping

NEOEN BESS Operations

CAPITAL BATTERY, AUSTRALIA (100 MW / 200 MWh)

Once operational, a BESS typically completes one charge and discharge cycle per day.

A crew of approximately 2-10 workers, contracted by Neoen, will operate Jumbo BESS. Neoen can elect to operate each day or not.

Permanent fencing will enclose the BESS facility. Site lighting and security cameras will be installed. Site lighting will be designed to avoid nighttime light pollution.

Did you know that Neoen is a pioneer in battery energy storage? Neoen delivered the world's first utility scale battery, Hornsdale Power Reserve, located in South Australia.

COLLIE BATTERY, AUSTRALIA
(219 MW / 877 MWh)

ISBILLEN POWER RESERVE, SWEDEN
(93.9 MW / 93.9 MWh)

We want to hear from you!

- The consultation period for Jumbo BESS will continue through summer 2025.
- Neoen is consulting Rightsholders, stakeholders, landowners, occupants and residents in the immediate vicinity of the project, and the broader community.
- Feedback gathered during the consultation period will form part of a public consultation record that will be included in Neoen's AUC application.

We want to hear from you!

- Phone: (587) 434-7547
- Email: sbrown@sabrenergyconsulting.com
- Mail: Box 3 – Suite 530 – 150 9th Avenue SW Calgary, Alberta T2P 3H9
- Request a 1-on-1 meeting